

DETAILED ACTION

Claims

Claims 1, 20, 21, 25, 26, 28, and 29 are amended. Claims 32 and 33 are added.
Claim 6 is canceled by Applicant.

Claim Rejections - 35 USC § 112

Rejections under 35 U.S.C. 112 are withdrawn.

Allowable Subject Matter

Claims 1-5, 7-21, and 24-33 are allowed.

The following is an examiner's statement of reasons for allowance:

As to independent claim 1, a thorough search of relevant prior art of record did not disclose, alone or in combination, an optical element as claimed comprising:

a linearly polarized light reflection polarizer (B) transmitting linearly polarized light with one polarization axis and selectively reflecting linearly polarized light with the other polarization axis perpendicular to the one polarization axis, wherein

the polarizing element (A) and the linearly polarized light reflection polarizer (B) are laminated in the optical element; and

the polarizing element (A) has a distortion rate with respect to emitting light to incident light in the normal direction of 0.5 or more and

Art Unit: 2871

a distortion rate with respect to emitting light to incident light at an angle inclined from the normal direction by 60 degrees or more of 0.2 or less, and

wherein a reflection band width of the polarizing element (A) is 200 nm or more, and

a twist pitch length of a cholestric liquid crystal in the polarizing element (A) varies along the thickness direction.

The closest combination of prior art is Bowley et al [Bowley] USPGPUB 2003/0063245 in view of Winker et al [Winker] USPAT 6,710,831 [also compare Ma, USPAT 6,757,039 , Figures 7A and 7B with associated explanations in the Spec.].

As to claim 1, Bowley discloses [entire patent, especially [0097] and Figure 4] an optical element comprising: a polarizing element (A) [408], separating incident light into polarization to then emit light, and made of a cholesteric liquid crystal.

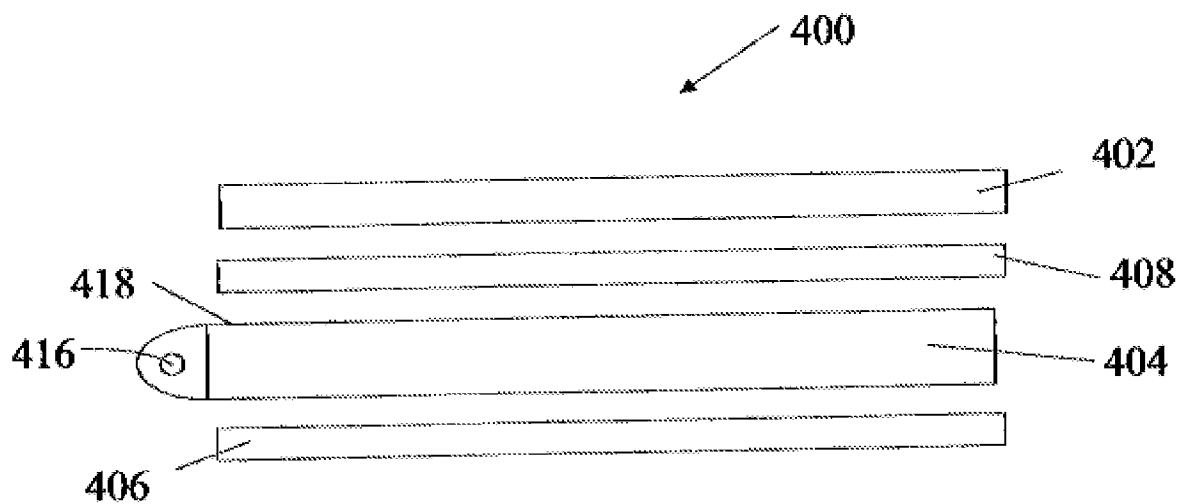


Fig. 4

Applicant's performance limitations wherein the polarizing element (A) has a distortion rate with respect to emitting light to incident light in the normal direction of 0.5 or more and a distortion rate with respect to emitting light to incident light at an angle inclined from the normal direction by 60 degrees or more of 0.2 or less, the polarizing element (A) has a function increasing a linearly polarized light component of emitting light as incidence angle is larger are characteristic of a broad band cholesteric polarizers like those of Bowley.

Winker discloses [col. 7, lines 47-57] a linear reflective polarizer in conjunction with a zero to half-wave retarder to serve as a tunable mirror for high brightness display.

However, no prior art with proper motivation to combine was found to render obvious the particular structural configuration as claimed. In fact, Ma teaches that the

Art Unit: 2871

addition of a linear reflection polarizer (B) is unnecessary [col. 11, lines 60-65], which supports Applicant's claim of unexpected results.

Dependent claims are allowable due to their proper dependence upon allowed claim 1.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

References cited but not applied are relevant to the instant Application.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TIMOTHY RUDE whose telephone number is (571)272-2301. The examiner can normally be reached on Increased Flex Time Program.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nelms C. David can be reached on (571) 272-1787. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2871

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/TIMOTHY RUDE/
Primary Examiner, Art Unit 2871